

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-41 (canceled)

1 **Claim 42** (previously presented): A method for obtaining expression of a tumor
2 suppressor gene in a tumor cell in a mammal *in vivo*, wherein the tumor cell is caused by the
3 absence of a tumor suppressor gene or the presence of a pathologically mutated tumor suppressor
4 gene, the method comprising:

5 contacting the tumor cell with an effective amount of a replication-deficient
6 recombinant adenovirus expression vector comprising: a) a partial or total deletion of a protein
7 IX-encoding DNA sequence, and b) a gene encoding a foreign protein having a tumor
8 suppressive function, wherein said contacting comprises intratumoral, peritumoral or
9 intravesicular injection of the recombinant adenovirus expression vector under suitable
10 conditions such that the foreign protein is expressed in the tumor cell.

1 **Claim 43** (currently amended): A method of inhibiting the proliferation of a
2 tumor cell in a mammal, wherein the tumor cell is caused by the absence of a tumor suppressor
3 gene or the presence of a pathologically mutated tumor suppressor gene, the method comprising:

4 administering to the mammal an effective amount of a replication-deficient
5 recombinant adenovirus expression vector comprising: a) a partial or total deletion of a protein
6 IX-encoding DNA sequence; and b) a gene encoding a foreign functional protein having a tumor
7 suppressive function under suitable conditions to the animal mammal, wherein said
8 administering comprises intratumoral, peritumoral or intravesicular injection of the replication-
9 deficient recombinant adenovirus vector under suitable conditions such that the foreign
10 functional protein is expressed in the tumor cell.

1 **Claim 44** (previously presented): The method of claim 42 or 43, wherein the
2 tumor suppressor gene encodes a protein selected from the group p53, p21, p16, Rb, Wilm's
3 tumor WT1 protein, h-NUC, mitosin and mito and p21.

1 **Claim 45** (previously presented): The method of claim 42 or 43, wherein the
2 tumor suppressor gene encodes p53.

1 **Claim 46** (previously presented): The method of claim 42 or 43, wherein the
2 gene is a suicide gene.

1 **Claim 47** (previously presented): The method of claim 42 or 43, wherein the
2 tumor cell is a member selected from the group consisting of non-small cell lung cancer, small
3 cell lung cancer, hepatocarcinoma, melanoma, retinoblastoma, breast tumor, colorectal
4 carcinoma, leukemia, lymphoma, brain tumor, cervical carcinoma, sarcoma, prostate tumor,
5 bladder tumor, tumor of the reticuloendothelial tissues, Wilm's tumor, astrocytoma,
6 glioblastoma, neuroblastoma, ovarian carcinoma, osteosarcoma, or renal cancer.

1 **Claim 48** (previously presented): The method of claim 42 or 43, wherein
2 deletion of the protein IX-encoding DNA sequence extends from about 3500 bp from the 5' viral
3 termini to about 4000 bp from the 5' viral termini.

1 **Claim 49** (previously presented): The method of claim 42 or 43, wherein the
2 recombinant adenovirus expression vector further comprises a deletion of a non-essential DNA
3 sequence in adenovirus early region 3 or early region 4.

1 **Claim 50** (previously presented): The method of claim 42 or 43, wherein the
2 recombinant adenovirus expression vector further comprises a deletion of DNA sequences
3 designated adenovirus E1a and E1b.

1 **Claim 51** (previously presented): The method of claim 42 or 43, wherein the
2 recombinant adenovirus expression vector further comprises a deletion of early region 3 or 4 and
3 DNA sequences designated adenovirus E1a and E1b.

1 **Claim 52** (currently amended): The method of claim 51 ~~42 or 43~~, wherein the
2 recombinant adenovirus expression vector further comprises a deletion of up to forty nucleotides
3 positioned 3' to the site of the adenovirus E1a and E1b DNA sequence deletions deletion,
4 [[E1b,]] and the site of the partial or total deletion of the protein IX-encoding deletions sequence,
5 and wherein said foreign functional protein comprises a polyadenylation signal.

1 **Claim 53** (previously presented): The method of claim 42 or 43, wherein the
2 recombinant adenovirus expression vector is a Group C adenovirus selected from a serotype 1, 2,
3 5 or 6.

1 **Claim 54** (previously presented): The method of claim 42 or 43, wherein the
2 recombinant adenovirus expression vector is selected from the group consisting of A/C/N/53 and
3 A/M/N/53.

1 **Claim 55** (previously presented): The method of claim 42 or 43, further
2 comprising administering a therapeutic agent that controls cell cycle progression and/or induces
3 cell death.

1 **Claim 56** (previously presented): The method of claim 42 or 43, wherein the
2 mammal is a human.

1 **Claim 57** (previously presented): A method for obtaining expression of a suicide
2 protein in a cell, the method comprising administering to the cell an effective amount of a
3 recombinant adenovirus expression vector comprising: a) a partial or total deletion of a protein
4 IX-encoding DNA sequence, and b) a gene encoding a suicide protein, wherein an mRNA
5 encoding the suicide protein is produced by the cell.

1 **Claim 58** (currently amended): A method for reducing the proliferation of a
2 tumor [[cells]] cell in a mammal, the method comprising administering under suitable conditions
3 an effective amount of an adenoviral expression vector comprising: a) a partial or total deletion
4 of a protein IX-encoding DNA sequence, and b) a gene encoding a suicide protein or a
5 biologically active fragment thereof; and a therapeutic agent that in the presence of the suicide
6 protein is toxic to the tumor cell.

1 **Claim 59** (previously presented): The method of claim 58, wherein the
2 therapeutic agent is a thymidine kinase metabolite or a functional equivalent thereof.

1 **Claim 60** (previously presented): The method of claim 58, wherein the
2 thymidine kinase metabolite is ganciclovir or 6-methoxypurine arabinonucleoside or a functional
3 equivalent thereof.

1 **Claim 61** (previously presented): The method of claim 58, wherein the
2 adenoviral expression vector is administered by injection into the tumor mass.

1 **Claim 62** (previously presented): The method of claim 58, wherein the tumor
2 cell is hepatocellular carcinoma.

1 **Claim 63** (previously presented): The method of claim 58, wherein the
2 adenoviral expression vector is administered directly into the hepatic artery of the subject.

1 **Claim 64** (canceled)

1 **Claim 65** (previously presented): The method of claim 58, wherein the suicide
2 protein is a functional thymidine kinase protein, a functional *E. coli DEO A* protein, or a
3 functional cytosine deaminase protein.

1 **Claim 66** (previously presented): The method of claim 58, wherein the
2 recombinant adenovirus expression vector further comprises a deletion of a non-essential DNA
3 sequence in adenovirus early region 3 or early region 4.

1 **Claim 67** (previously presented): The method of claim 58, wherein the
2 recombinant adenovirus expression vector further comprises a deletion of DNA sequences
3 designated adenovirus E1a and E1b.

1 **Claim 68** (previously presented): The method of claim 58, wherein the
2 recombinant adenovirus expression vector further comprises a deletion of early region 3 or 4 and
3 DNA sequences designated adenovirus E1a and E1b.

1 **Claim 69** (currently amended): The method of claim 68 [[58]], wherein the
2 recombinant adenovirus expression vector further comprises a deletion of up to forty nucleotides
3 positioned 3' to the site of the adenovirus E1a and E1b DNA sequence deletions deletion,
4 [[E1b,]] and the site of the partial or total deletion of the protein IX-encoding deletions sequence,
5 and wherein said foreign functional protein comprises a polyadenylation signal.

1 **Claim 70** (previously presented): The method of claim 58, wherein the
2 recombinant adenovirus expression vector is a Group C adenovirus selected from a serotype 1, 2,
3 5 or 6.

1 **Claim 71** (previously presented): The method of claim 58, wherein the
2 recombinant adenovirus expression vector is selected from the group consisting of A/C/N/53 or
3 A/M/N/53.

1 **Claim 72** (previously presented): The method of claim 58, further comprising
2 administering a therapeutic agent that controls cell cycle progression and/or induces cell death.

1 **Claim 73** (previously presented): The method of claim 58, wherein the tumor
2 cell is a human tumor cell.

1 **Claim 74** (previously presented): A kit for reducing the proliferation of tumor
2 cells comprising the components of the adenoviral expression vector of claim 58, a thymidine
3 kinase metabolite or functional equivalent thereof, pharmaceutical carriers and instructions for
4 the treatment of hepatocellular carcinoma using the kit components.